Rising Tides in Dentistry

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The 1-wing inlay/Maryland bridge; an implant alternative

A.K.A. the JIMBO BRIDGE
What is the difference between “COMPLETE” AND “FINISHED”
complete
complete  Finished
Completely Finished
Finished Completely
Or the nononono’s
The Good Ol’ Fashioned Maryland Bridge
ACID ETCHED RETAINED FIXED PARTIAL DENTURE
A Little History

   Perforated retainer for periodontal splinting
   Perforated retainer for replacement of missing anterior teeth.
1982 LIVADITIS and THOMPSON (JPD47: 52, 1982)
   Electrolytic etching of retainer metal wing for better resin – to – metal bond.
Attachment Mechanisms to Tooth

- Enamel–to–resin bond
- Cohesive bond of the composite resin
- Resin-to-framework bond
No bonding to metal = COHESIVE COMPOSITE FAILURE

History
Rochette 1973
Negative Results
Conventional FPD

- **Survival rate** 10 yrs: 89.1%.
- **Success rate** 10 yrs: 71.1%.
- **Most frequent complication**: loss of vitality 10%.

Early Survival Data of Maryland Variety

• Creugers, 1991
  - 89% after 1 year
  - 845 after 2 years
  - 74% after 4 years

• Boyer, 1993
  - 89% after 1 year
  - 83% after 2 years
  - 72% after 4 years

• Kershbaum, 1996
  - 97% after 1 year
  - 82% after 5 years

• Probster, 1997
  - 76% after 5 years
  - 60% after 10 years
Resin-Bonded FPD

- Survival rate after 5 years: 87%
- Most frequent complication: Debonding (loss of retention) with 19.2%.

Problems

• De-bonding of metal wing(s).
• Gray “show through” on translucent abutments
Problems:
• De-bonding of metal wing(s).
• Gray “show through” on translucent abutments

Solution:
Use only one wing!
Results:
1. 269 prostheses – mean service life 51.7 month
2. 14 failed - debonded or were not present
3. Clinical retention rate 95.5%
4. Presence of contact points between cantilever and adj tooth
5. Pt’s satisfaction 8.5 :
   - 11% concern with appearance of metal
   - 50% avoid chewing
   - expectation 7.5y

A retrospective clinical evaluation of two-unit cantilevered resin-bonded fixed partial dentures. MG Botelho, KCM Leung  J Am Dent Assoc 2006; 137:783-788

269 prostheses: 88 M (41.1%) & 126 F (58.9%).
Overall mean service life of 51.7 months (range 13.2-141.6 months).
Clinical retention rate of 95.5%.
14 prostheses failed:
- 8 maxillary & 6 mandibular
- 5 Incisor, 7 premolars & 2 molars
- 12 debonded (retentive failure)
- 2 due abut. ext. (root fracture + perio problem)
Two-Retainer vs. Single-Retainer

• The 5 year survival rate for the two-retainer group was 73.9% and for the single-retainer group was 92.3%.

• When the unilateral fractures of the two retainer group were taken as a criteria for failure the 5 year success rate decreased to 67.3%.

Kern M. Quintessence International 2005:36(2);141-47
The JIMBO Bridge

- Combines the techniques of the tried and true pinlay bridge of the 1950s with the predictably fair Maryland Bridge of the 1980s.
“What would Emo do?”
AN ATLAS
of CAST GOLD
PROCEDURES

1964 rev 1969

Operative Atlas II

The diagrams illustrate the various steps in the preparation of a gold crown for a tooth. Each diagram shows a different aspect of the crown, from the model to the finished product. The text accompanying the diagrams provides detailed instructions on how to prepare the tooth and place the crown accurately. The atlas is a valuable resource for dental professionals looking to master the art of cast gold procedures.
Traditional design

The Jimbo Bridge
Etched casting: An improved retentive mechanism for resin-bonded retainers. GJ Livaditis VP Thompson JPD 1982, 47:1
Attachment Mechanisms to Tooth

- Enamel–to–resin bond
- Cohesive bond of the composite resin
- Resin-to-framework bond

• PHYSICAL RESISTANCE OF PARALLEL PREPARATION FEATURES
What I used to use
Step 1. Lingual chamfer
Step 2. Mesial groove
Step 2a. Mesial to Distal Groove to delineate end of metal
Step 3. Make indentation in enamel with round diamond
Step 4. In the center of the round indentation, use a ½ round bur to penetrate into the dentin.
Step 5. Use LOW SPEED twist drill, align with mesial groove, drill 2-3 mm.
Step 6. Sink the entire head of the 2Round carbide toward the distal
chamfer
groove
indent
penetrate dentin
Twist drill
round to depth
of head
Incisal Groove
M-Groove
Pinhole
Pit
Chamfer
Temporize with Durelon across grooves and holes.

(Ugly in, Ugly out)
Cement and metal choice

- Petrie 2001 – Silver Palladium with alloy primer best. (Panavia)
- Lin 1990 – Sandblasting had best interfacial strength.
Mesial groove   Incisal groove

Distal pit

Cingulum pin

****Cast in Silver-Palladium metal; sand blasted
Attachment Mechanisms to Tooth

- Enamel–to–resin bond
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- Resin-to-framework bond
- PHYSICAL RESISTANCE OF PARALLEL PREPARATION FEATURES
WARNING: There is NO ceramic product in today’s marketplace to even think about replacing the metal wing with a ceramic wing. Period.(?)
Finished Completely
Contact me
• Look me up on Facebook: IDON'TKNOWWHATFACEBOOKIS
• Look me up on Twitter: @whocareswhatithink
• Look me up on Instagram #mythumbsdon’tworklikethis
Don’t waste your time with other social media

BUT if you want a .pdf copy of this seminar, any .jpeg pics, or you want to invite me lecture or to play golf (preferably after a lecture), contact me at doctorsoltys@gmail.com